

**AMENDMENTS TO THE CLAIMS**

1-8. (Canceled)

9. (currently amended) An OX2R-binding antibody or an antigen-binding fragment thereof, comprising an antigen binding site from a substantially pure or recombinant antibody, wherein the antibody specifically binds to ~~a polypeptide consisting essentially of mature~~ an antigen formed by the amino acid sequence of SEQ ID NO:20 or a fragment thereof, wherein the fragment exhibits a functional property of an intact subunit.

10. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or antigen-binding fragment thereof blocks the interaction between OX2 and OX2R.

11. (currently amended) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein ~~the binding antibody or the antigen-binding fragment thereof~~ is a Fv, Fab, or Fab<sub>2</sub> fragment.

12. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or the antigen-binding fragment thereof is conjugated to a chemical moiety.

13. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the antibody or the antigen-binding fragment thereof is attached to a solid substrate.

14. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 13, wherein the solid substrate is a bead or a plastic membrane.

15. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or the antigen-binding fragment thereof binds the polypeptide of SEQ ID NO:20 or a fragment thereof, with a K<sub>d</sub> of at least 30 μM.

16. (currently amended) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the ~~polypeptide~~ amino acid sequence of comprising mature SEQ ID NO:20 is a fusion protein.

17. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or the antigen-binding fragment thereof is in a sterile composition.

18. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or the antigen-binding fragment thereof is labeled with a detectable label.

19. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 18, wherein the label is a fluorescent label or a radioactive label.

20. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the binding antibody or antigen-binding fragment thereof binds the polypeptide comprising SEQ ID NO:20 or a fragment thereof when it is denatured.

21. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the antibody is a polyclonal antibody.

22. (previously presented) The binding antibody or the antigen-binding fragment thereof of claim 9, wherein the antibody is raised against a polypeptide comprising SEQ ID NO:20 or a fragment thereof.

23. (previously presented) A kit comprising:

- a) the binding antibody or the antigen-binding fragment thereof of claim 9;
- b) a compartment for the binding antibody or the antigen-binding fragment thereof; and
- c) instructions for use or disposal of reagents in the kit.